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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,588	09/20/1999	STEVEN JAMES SHATTIL	022950PCTUS	4149

7590 10/24/2003
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BOULDER, CO 80303

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 10/24/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/381,588

Applicant(s)

SHATTIL, STEVEN JAMES

Examiner

Kevin M Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-136 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-136 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. This office action, in response to the amendment filed 7/23/2003, is a non-final office action.

Response to Arguments

2. Applicant's arguments with respect to claims 44-111 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 44-136 are rejected under 35 U.S.C. 102(e) as being anticipated by anticipated Shattil (US 6,331,837). Shattil has an effective filing date of May 23, 1997 since Shattil claims priority on application No. 08/862,859.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 44, 51-53, 96, 97, 101-111, Shattil discloses a method of transmitting a CIMA communication signal comprising a plurality of electromagnetic carrier signals having a plurality of frequencies. Figure 14 shows the frequency diversity receiver. The carriers are provided with a phase offset (column 15, lines 50-54) and each signal maps a plurality of waveforms to a pulse generated from the superposition of the waveforms. The pulse is orthogonal in time. The pulse is shown in figure 13 and is generated by the superposition of the five signals shown above the pulse. This pulse will be transmitted.

Regarding claim 45, Shattil discloses the phase of each signal is selected to provide a specific superposition of the signals at the receive antenna (column 11, lines 1-10).

Regarding claims 46 and 47, a plurality of carriers and a plurality of carrier groups are used to transmit the data. Multi-carrier is a group of frequency diverse carriers (column 14, lines 9-25).

Regarding claim 48-50, the amplitude is controlled such that it provides a specific superposition of the signals at the receiver to optimize reception (column 11, lines 1-10).

Regarding claims 54-56, figure 10A discloses the transmitter transmitting signals from a plurality of antennas.

Regarding claims 57 and 58, the CIMA system also comprises CDMA components and a pulse train of pulses is shown in figure 13 (column 13, lines 1-17).

Regarding claims 59-61, Shattil discloses the received signals are combined and can create constructive and destructive interference depending on the frequency of each carrier (column 15, lines 50-53).

Regarding claims 62, 67, 68, 73, 80, 82, 89-91, 93, 98 and 99, Shattil discloses a method of transmitting a CIMA communication signal comprising a plurality of electromagnetic carrier signals having a plurality of frequencies. Figure 14 shows the frequency diversity receiver. The carriers are provided with a phase offset (column 15, lines 50-54) and each signal maps a plurality of waveforms to a pulse generated from the superposition of the waveforms. The pulse is orthogonal in time. The pulse is shown in figure 13 and is generated by the superposition of the five signals shown above the pulse. This pulse will be transmitted. Shattil, further, discloses the received signals are combined and can create constructive and destructive interference depending on the frequency of each carrier (column 15, lines 50-53).

Regarding claims 63-66, delays or phase shifts are provided to ensure that interference signals are cancelled (column 10, lines 43-46).

Regarding claims 69-72, figure 10a discloses a plurality of transmitter elements and each transmitter transmits on a different carrier.

Regarding claims 74 and 75, delays or phase shifts are provided to ensure that interference signals are cancelled (column 10, lines 43-46).

Regarding claims 76-79, Shattil discloses the received signals are combined and can create constructive and destructive interference depending on the frequency of each carrier (column 15, lines 50-53).

Regarding claim 81, the amplitude is controlled such that it provides a specific superposition of the signals at the receiver to optimize reception (column 11, lines 1-10).

Regarding claims 83-87, Shattil discloses a method of transmitting a CIMA communication signal comprising a plurality of electromagnetic carrier signals having a plurality of frequencies. Figure 14 shows the frequency diversity receiver. The carriers are provided with a phase offset (column 15, lines 50-54) and each signal maps a plurality of waveforms to a pulse generated from the superposition of the waveforms. The pulse is orthogonal in time. The pulse is shown in figure 13 and is generated by the superposition of the five signals shown above the pulse. This pulse will be transmitted.

Regarding claims 88, 92 and 94, gain adjustments are done to correct for interference in the channel (column 5, lines 15-24).

Regarding claims 95 and 100, Shattil discloses a method of transmitting a CIMA communication signal comprising a plurality of electromagnetic carrier signals having a plurality of frequencies. Figure 14 shows the frequency diversity receiver. The carriers are provided with a phase offset (column 15, lines 50-54) and each signal maps a plurality of waveforms to a pulse generated from the superposition of the waveforms. The pulse is orthogonal in time. The pulse is shown in figure 13 and is generated by the superposition of the five signals shown above the pulse. This pulse will be transmitted. The transmitters transmit time domain signals (column 3, lines 1-17). The signals are

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converted to frequency domain and input to frequency domain filters to filter out certain frequency ranges (column 14, lines 26-39). The signal is converted back to the time domain and the end result is the time domain pulse shown in figure 13.

Regarding claims 112-136, of the plurality of carrier signals disclosed, each singular frequency can be a singular frequency in a frequency hopping system.

Conclusion

Any response to this action should be mailed to:

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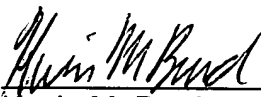
or faxed to:

(703) 872-9314, (for formal communications intended for entry or for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Burd, whose telephone number is (703) 308-7034. The Examiner can normally be reached on Monday-Thursday from 9:00 AM - 6:00 PM.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.


Kevin M. Burd
PATENT EXAMINER
10/19/03